

PATENT ABSTRACTS OF JAPAN

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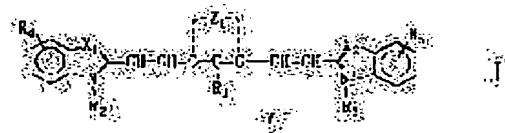
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(54) POSITIVE TYPE PHOTSENSITIVE COMPOSITION

(57)Abstract:

PROBLEM TO BE SOLVED: To stably give a clear image with a developing solution in a wide pH range and to ensure good printing resistance by forming a recording layer containing a polymer soluble in an alkaline developing solution, a specified near IR absorbing dye and a specified triarylphosphonium salt compound on a substrate.

SOLUTION: The positive type photosensitive composition has a recording layer containing at least a polymer soluble in an alkaline developing solution, a cyanine dye of formula I as a near IR absorbing dye and a triarylphosphonium salt compound of formula II on a substrate. In the formula I, R1 is H, alkyl or the like, R2 and R3 are each alkyl, alkoxyalkyl or the like, R4 and R5 are each H, halogen or the like, Z1 is a divalent hydrocarbon residue forming a cyclohexene ring or the like, X1 and X2 are each S or the like and Y1 is a counter anion of the dye. In the formula II, Ar is aryl, R6 is alkyl or the like and Y2 is a counter anion.



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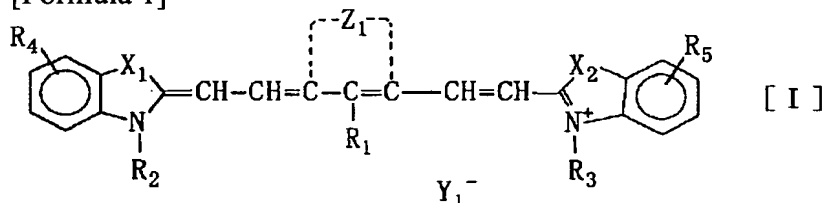
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CLAIMS

[Claim(s)]

[Claim 1] The positive type photosensitivity constituent characterized by containing the thoria reel phosphonium salt compound shown by the following general formula [II] at this recording layer in the photosensitive constituent which has a recording layer containing the near infrared ray absorption color shown in an alkaline developer by the polymer and the following general formula [I] of fusibility at least on a base material.

[Formula 1]



In [general formula [I], R1 expresses a hydrogen atom, an alkyl group, a halogen atom, or a diphenylamino radical, R2 and R3 express an alkyl group, an alkoxyalkyl group, an acyloxy alkyl group, or a sulfoalkyl radical, and R4 and R5 express a hydrogen atom, a halogen atom, an alkoxy group, or a phenyl group, in the case of a phenyl group, condense with the phenyl group of a color frame, and may form a naphthalene ring. Z1 is a substituent on the carbon atom of a color frame, and is the hydrocarbon residue of the bivalence which connects with the carbon atom of a color frame and forms a cyclohexene ring or a cyclopentene ring, two independent hydrogen atoms, or two independent alkyl groups. X1 and X2 are the methylene groups which may have a sulfur atom or a substituent, and the substituents of a methylene group are two with a carbon number of six or less alkyl groups or hydrocarbon residue which forms a with a carbon number of six or less spiro ring. Although Y1- expresses the counter anion of a color, since the color itself serves as a neutral molecule, in both the cases of a sulfoalkyl radical, R2 and R3 are unnecessary.]

[Formula 2]



In [general formula [II], Ar expresses an aryl group, R6 expresses an alkyl group, an alkenyl radical, an aryl group, or an aralkyl radical, and Y2- expresses a counter anion.]

[Claim 2] The positive type photosensitivity constituent according to claim 1 with which the polymer of fusibility is characterized by being novolak resin at least at an alkaline developer.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] This invention relates to the positive type photosensitivity constituent which can carry out direct platemaking using near infrared ray laser from the digital signal of a computer etc. especially and which can be engraved direct about the photosensitive constituent which has high sensitivity to a near infrared ray field.

[0002]

[Description of the Prior Art] In case the positive type printing version usually has the gestalt which applied the photosensitive paint film on the base material and processes the photosensitive paint film with the developer after exposure with a suitable radiant ray, when the solubility to the developer of the paint film exposed [radiant ray] improves rather than the solubility of the radiant ray unexposed section, they are image formation and the printing version of the type engraved. The image field (radiant ray unexposed section) which remains after platemaking is ink receptiveness or hydrophobicity, and the field (section exposed [radiant ray]) where elution clearance of the paint film was carried out is water reservoir compatibility or a hydrophilic property by preparing a hydrophilic layer in the medium of the base material of a hydrophilic property, or a photosensitive paint film and a base material. In the field of the positive type lithography PS plate, the technique used as a photosensitive paint film with such a function combining an o-naphthoquinonediazide-5-sulfonic-acid derivative and phenol resin is indicated by JP,37-3627,B, the 37-1954 official report, the 43-28406 official report, the 45-9610 official report, etc. However, radiant rays given in these reference are the ultraviolet rays corresponding to the absorption wavelength of the ultraviolet-rays field which an o-naphthoquinonediazide-5-sulfonic-acid derivative has, and it is obvious data that the paint film given [the] in reference does not have the photosensitivity over the radiant ray of a near infrared ray field.

[0003] On the other hand, development of laser in recent years can be remarkable, and can come to hand [the high power which emits 1200nm infrared radiation from the wavelength of 760nm especially and small semiconductor laser, or solid state laser] now easily. Since the high resolution direct platemaking from digital data, such as a computer, is attained by using such laser as the record light source, researches and developments of the heat mode platemaking ingredient by laser are becoming active. For example, the technique which the technique which combined phenol resin, the onium salt of pyrolysis nature, and the near infrared ray absorption color with the patent No. 2577718 official report is indicated, and combined phenol resin, insidious Broensted acid, and a near infrared ray absorption color with JP,7-20629,A, the 9-138500 official report, the 9-185160 official report, and the 9-211863 official report is indicated. The infrared sensitivity printing version of a positive type or a negative mold can be obtained by controlling appropriately the class of ingredient of a publication, molecular weight, and a compounding ratio in these reference.

[0004] Furthermore, the technique about the positive type photosensitivity constituent which combined the resin containing a hydrophilic radical, the thio pyrylium salt which has specific structure, metal chelate compound or the boron salt, and the infrared absorption color is indicated by JP,10-3165,A and this common No. 153863 [ten to] official report. With these techniques, by mixing three components of a (infrared absorption color), and the (the thio pyrylium salt, the metal chelate compound or the boron salt) of specific structure with (resin), poorly soluble floc is formed in alkaline processing liquid, induction of the decomposition of the floc by on/off of the heat generated by infrared laser radiation is carried out, and image formation is made according to elution of a laser radiation part with alkaline processing liquid. The example using the sulfonates indicated by the

example using the imidazoline compound indicated by WO 97/No. 39894, a quinolinium compound, a benzothiazolium compound, a pyridinium compound, etc. and JP,10-268512,A as a technique of similarly adding the component which controls the dissolution of resin to resin and an infrared absorption color, phosphoric ester, and aromatic series carboxylate etc. is given.

[0005] However, since these techniques had low laser sensibility and were small, they had a problem at the point which forms a clear image. [of the solubility difference over the alkaline processing liquid in the exposure part (exposure section) and the non-irradiated part (unexposed section) of infrared laser]

[0006]

[Problem(s) to be Solved by the Invention] By recording using the semiconductor laser which emits a near infrared ray, digital data, such as a computer, to direct platemaking is possible for the object of this invention, and it is to give a clear image to stability and for the print durability at the time of printing offer a good positive type photosensitivity constituent to the developer of large pH range.

[0007]

[Means for Solving the Problem] The above-mentioned technical problem was attained by using at least the near infrared ray photosensitivity constituent which has the recording layer which contains the polymer of fusibility, the cyanine dye which is a near infrared ray absorption color which has specific structure, and a thoria reel phosphonium salt compound in an alkaline developer on a base material. Although it is still unknown about the operation mechanism of the photosensitive constituent of this invention, by mixing three components of a (thoria reel phosphonium salt compound) with a (polymer) and (the near infrared ray absorption color which has specific structure) to homogeneity, poorly soluble floc is formed in alkaline processing liquid, and when this floc carries out solution condensation in response to the exposure of near-infrared laser further, that by which image formation is carried out is presumed. Moreover, since unstable compounds (sulfonium salt of pyrolysis nature, iodonium salt, etc.) are not used to heat and ultraviolet rays, the positive type photosensitivity constituent which has the engine performance stabilized by the treatment under a ** room can be offered.

[0008] The compound shown by the following general formula [II] is used for a thoria reel phosphonium salt compound. Moreover, it is also possible to use two or more sorts combining these.

[0009]

[Formula 3]



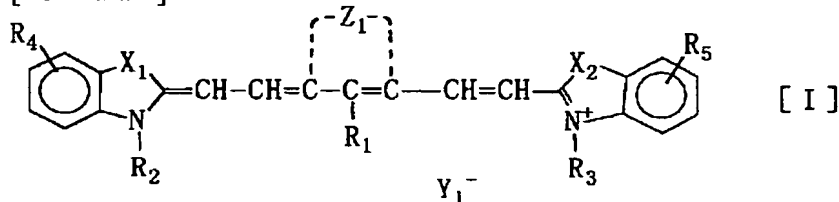
[0010] In a general formula [II], Ar expresses an aryl group, R6 expresses an alkyl group, an alkenyl radical, an aryl group, or an aralkyl radical, and Y2- expresses a counter anion.

[0011] A phenyl group etc. is mentioned as an example of Ar. This may have the substituent. As an example of R6, aralkyl radicals, such as aryl groups, such as alkenyl radicals, such as alkyl groups, such as a methyl group, an ethyl group, n-butyl, n-amyl group, n-hexyl group, and a cyclo propyl group, a vinyl group, and an allyl group, and a phenyl group, and benzyl, etc. are mentioned. Moreover, these may have the substituent further. As an example of Y2-, a chloride ion, bromine ion, iodine ion, fluoroboric-acid ion, etc. are mentioned.

[0012] As a near infrared ray absorption color, the compound shown by the following general formula [I] as cyanine dye is used. Moreover, it is also possible to use two or more sorts combining these.

[0013]

[Formula 4]



[0014] In a general formula [I], R1 expresses a hydrogen atom, an alkyl group, a halogen atom, or a

diphenylamino radical, R2 and R3 express an alkyl group, an alkoxyalkyl group, an acyloxy alkyl group, or a sulfoalkyl radical, and R4 and R5 express a hydrogen atom, a halogen atom, an alkoxy group, or a phenyl group, in the case of a phenyl group, condense with the phenyl group of a color frame, and may form a naphthalene ring. Z1 is a substituent on the carbon atom of a color frame, and is the hydrocarbon residue of the bivalence which connects with the carbon atom of a color frame and forms a cyclohexene ring or a cyclopentene ring, two independent hydrogen atoms, or two independent alkyl groups. X1 and X2 are the methylene groups which may have a sulfur atom or a substituent, and the substituents of a methylene group are two with a carbon number of six or less alkyl groups or hydrocarbon residue which forms a with a carbon number of six or less spiro ring. Although Y1- expresses the counter anion of a color, since the color itself serves as a neutral molecule, in both the cases of a sulfoalkyl radical, R2 and R3 are unnecessary.

[0015]

[Embodiment of the Invention] Although the example of the thoria reel phosphonium salt compound used for the positive type photosensitivity constituent of this invention is shown below, it is not limited to these.

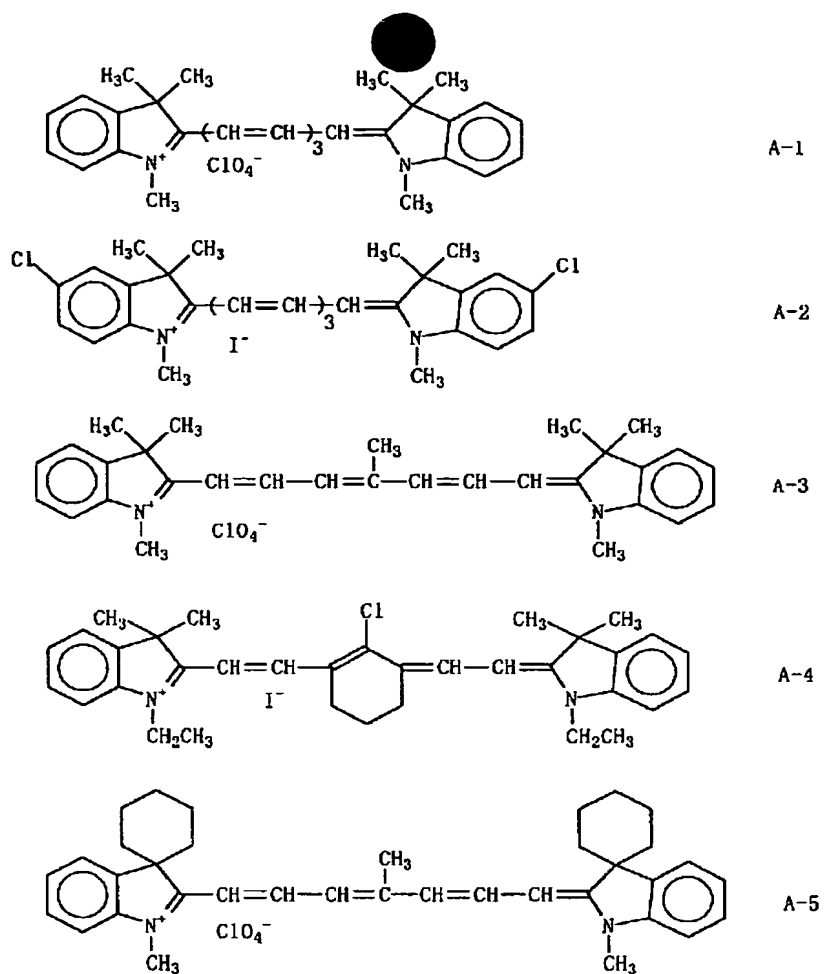
[0016] Methyltriphenylphosphonium bromide, methyltriphenylphosphonium iodide,

Ethyltriphenylphosphonium bromide, ethyltriphenylphosphonium fluoroborate, n-butyl triphenyl phosphonium bromide, n-amyl triphenyl phosphonium bromide, n-hexyl triphenyl phosphonium bromide, cyclo propyl triphenyl phosphonium bromide, Methoxymethyltriphenyl phosphonium chloride, acetonyl triphenyl phosphonium chloride, Bromomethyl triphenyl phosphonium bromide, chloro methyltriphenylphosphonium chloride, 3-BUOMO propyl triphenyl phosphonium bromide, triphenyl phosphonium (2-dimethylaminoethyl) bromide, Triphenyl phosphonium bromide, methyl tris (4-chlorophenyl) phosphonium iodide, (2-morpholino ethyl) Ethyl tris (3-chlorophenyl) phosphonium iodide, vinyl triphenyl phosphonium bromide, Allyl compound triphenyl phosphonium bromide, allyl compound triphenyl phosphonium chloride, Cinnamyl triphenyl phosphonium bromide, tetra-phenyl phosphonium bromide, Benzyltriphenylphosphonium bromide, benzyltriphenylphosphonium chloride, 4-chloro benzyltriphenylphosphonium chloride, 4-ethoxybenzyl triphenyl phosphonium bromide, etc.

[0017] Next, although the example of the compound which is used for the positive type photosensitivity constituent of this invention and which is shown by the general formula [I] is shown below, it is not limited to these.

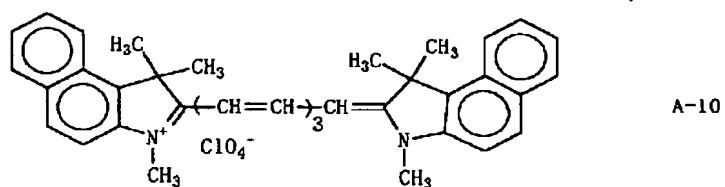
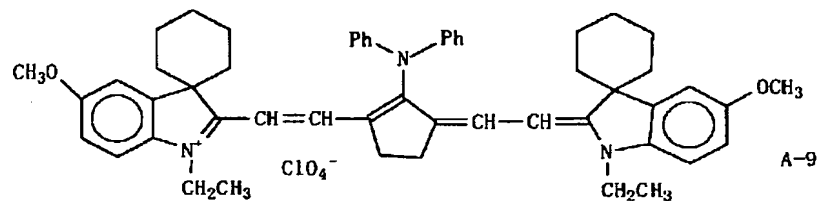
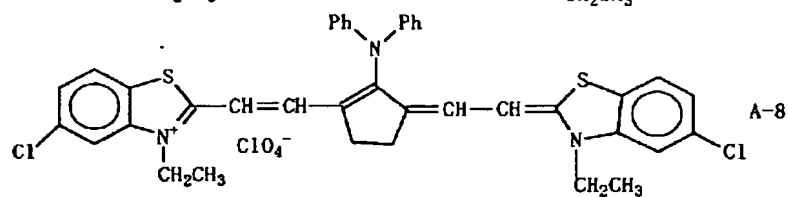
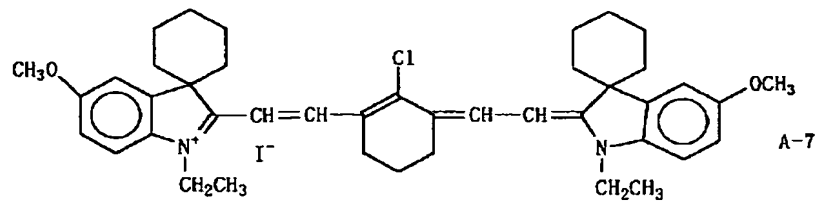
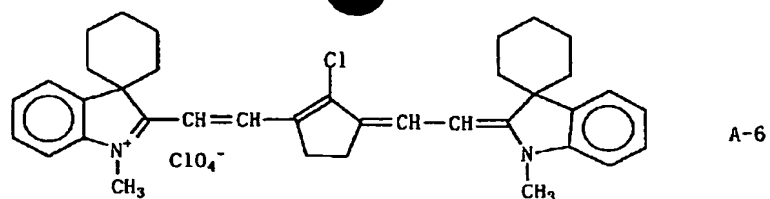
[0018]

[Formula 5]



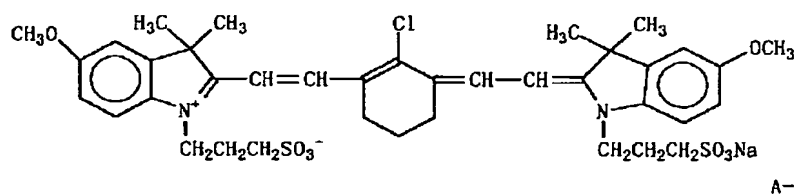
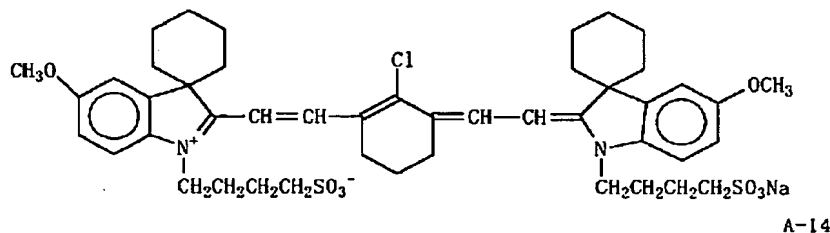
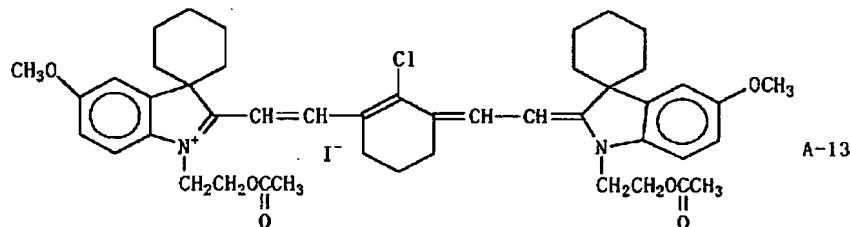
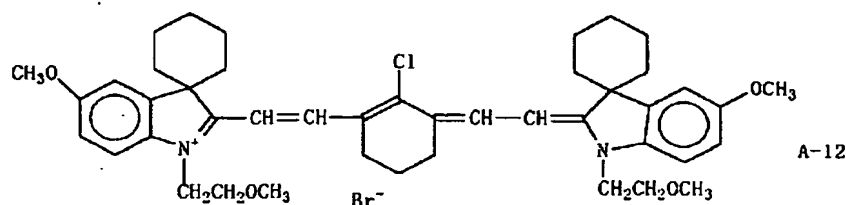
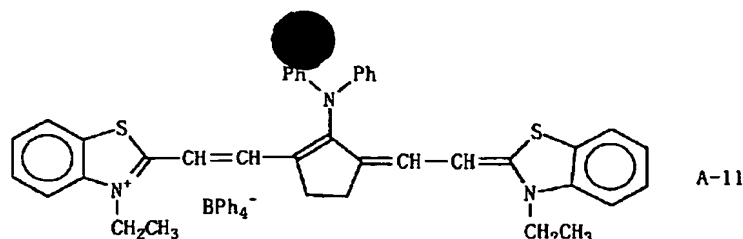
[0019]

[Formula 6]



[0020]

[Formula 7]



[0021] it is used for the positive type photosensitivity constituent of this invention -- at least, as a polymer of fusibility, phenol resin is desirable to an alkaline developer, and novolak resin, resol resin, or polyvinyl phenol resin is more specifically desirable to it.

[0022] As novolak resin, the object of aromatic hydrocarbon, such as a phenol, cresol, resorcinol, pyrogallol, bisphenol A, t-butylphenol, and 1-naphthol, which carried out the polycondensation of a kind under the acid catalyst at least to ketones, such as aldehydes, such as formaldehyde, a paraformaldehyde, an acetaldehyde, and a benzaldehyde, or an acetone, and a methyl ethyl ketone, is mentioned. The object of 1000-15000 has the desirable polystyrene equivalent weight average molecular weight (Mw) according to gel-permeation-chromatography (GPC) measurement about the molecular weight of novolak resin, and especially the object of 1500-10000 is still more desirable also in it.

[0023] As resol resin, the object of aromatic hydrocarbon, such as a phenol, cresol, resorcinol, pyrogallol, bisphenol A, t-butylphenol, and 1-naphthol, which carried out the polycondensation of a kind to aldehydes, such as formaldehyde, a paraformaldehyde, an acetaldehyde, and a benzaldehyde, under the basic catalyst at least is mentioned. The object of 1000-5000 has desirable Mw according to GPC measurement about the molecular weight of resol resin, and especially the object of 1500-3000 is still more desirable also in it. Moreover, as description of resol resin, in order that a solid object may hold the preservation stability of a positive type photosensitivity constituent with the passage of time under a room temperature, it is desirable.

[0024] As polyvinyl phenol resin, independent or two or more kinds of copolymers of hydroxystyrene, such as

o-hydroxystyrene, p-hydroxystyrene, and 2-(m-hydroxyphenyl) propylene, are mentioned. Moreover, the resin which protected some hydroxy groups of polyvinyl phenols by the t-butoxycarbonyl group, the pyranil radical, the furanyl radical, etc. is sufficient. The object of 1500-50000 is used especially preferably [Mw of polyvinyl phenol resin is desirable and] also in 1000-100000.

[0025] Among the above-mentioned resin, especially, novolak resin is desirable especially in order to hold the preservation stability of a positive type photosensitivity constituent with the passage of time, and the mechanical strength of the image to produce.

[0026] The operating rate of the polymer of fusibility is usually 95 % of the weight from 40 % of the weight to the total solids of this constituent at the alkaline developer in the positive type photosensitivity constituent of this invention, and it is 90% weight from 60 % of the weight preferably.

[0027] The operating rate of the triphenyl phosphonium system compound in the positive type photosensitivity constituent of this invention is usually 30 % of the weight from 0.5 % of the weight to the total solids of an ingredient, and is 10 % of the weight from 1 % of the weight preferably. When there is too much amount used, the elution nature of the non-image section (laser radiation part) to an alkaline developer falls, and if there is too little amount used, the elution resistance of the image section (laser non-irradiating part) to an alkaline developer will worsen.

[0028] About a near infrared ray absorption color, it can combine with the compound shown by the general formula [I], and the color or pigment of marketing which has the absorption maximum in 1200nm from the wavelength of 700nm can be used. Specifically, azo dye, metallic complex azo dye, a naphthoquinone color, anthraquinone dye, phthalocyanine dye, a SUKUWARIRIUMU color, an aminium color, a gene MONIUMU color, a metal thio RATO complex, thio pyrylium salt, insoluble azo pigment, a chelate azo pigment, phthalocyanine pigment, a perylene system pigment, a peri non system pigment, carbon black, etc. are mentioned. The phthalocyanine dye of fusibility, an aminium color, and a gene MONIUMU color are desirable to a solvent in it especially from the point of not reducing the mechanical strength of an image, and the point of not reducing the elution nature of a non-image part (laser radiation part) to an alkaline developer.

[0029] EXcolorIR-1, EXcolorIR-3 (NIPPON SHOKUBAI make), etc. are mentioned as an example of solvent fusibility phthalocyanine dye. As an example of an aminium color, IRG002, IRG003 (Nippon Kayaku make), etc. are mentioned. As an example of a gene MONIUMU color, IRG022, IRG023 (Nippon Kayaku make), etc. are mentioned.

[0030] In the positive type photosensitivity constituent of this invention, in order to raise the stability over a development, nonionic surfactants, such as sorbitan tristearate, sorbitan monopalmitate, a stearin acid monoglyceride, and the polyoxyethylene nonylphenyl ether, can be added. The rate of occupying in the photosensitive constituent of these surfactants has 0.05 to 15 desirable % of the weight, and especially its 0.1 to 5 % of the weight is desirable also in it.

[0031] The positive type photosensitivity constituent of this invention can be manufactured by applying the coating liquid which dissolved in the suitable solvent and prepared the constituent on a base material. As a solvent used here, a methanol, ethanol, 1-propanol, Alcohols, such as 1-methoxy-2-propanol, THF, 1, 3-dioxolane, Ether, such as 1,4-dioxane, 1, 2-dimethoxyethane, and ethylene glycol monomethyl ether, Ketones, such as an acetone, a methyl ethyl ketone, a cyclohexanone, and methyl isobutyl ketone Although amides, such as ester, such as aromatic hydrocarbon, such as toluene and a xylene, ethyl acetate, methyl acetate, and isobutyl acetate, N,N-dimethylformamide, N,N-dimethylacetamide, and N-methyl pyrrolidone, dimethyl sulfoxide, water, etc. can be mentioned It is not limited to these. these solvents are independent -- or it is mixed and used. The solid content concentration of coating liquid is 1 - 50 % of the weight preferably. Moreover, the coverage on the base material obtained after spreading desiccation has desirable 0.5 - 5.0 g/m². As the method of application, bar coating-machine spreading, spinner spreading, spray spreading, curtain spreading, DIP spreading, the Ayr knife spreading, blade spreading, roll coating, etc. can be mentioned.

[0032] Tic [by which plastic films, such as metals, such as paper which plastics, such as paper and polyethylene, laminated, aluminum, zinc, and copper, polyethylene terephthalate, polyethylene, polystyrene, a polycarbonate, and cellulose acetate, and a metal were vapor-deposited as a suitable base material used for this invention / brass] is mentioned. An object desirable as a base material used for this invention is polyester film or an aluminum plate, and also in it, especially since dimensional stability is good and comparatively cheap, an aluminum plate is desirable. The thickness of an aluminum plate has 0.1-1 desirablenmm, and especially its 0.2-

0.4mm is desirable also in it.

[0033] As for an aluminum plate, it is desirable to use the object which performed cleaning processing, a surface roughening process, and anodizing with a well-known technique in the field of the printing version. The aluminum front face which performed anodizing may perform hydrophilization processing using a sodium silicate, a fluoride zirconic acid potassium, a polyvinyl sulfonic acid, etc. if needed.

[0034] The positive type photosensitivity constituent of this invention can prepare undercoat on a base material if needed. As an undercoat component, although the hydrochloride of a carboxymethyl cellulose, a dextrin, gum arabic, 2-aminoethylphosphonic acid, phenylphosphonic acid, phenyl phosphinic acid, an alkylphosphine acid, a glycine, the beta-alanine, and triethanolamine etc. is mentioned, it may mix suitably and two or more objects of these may be used, for example. The coverage of undercoat has desirable 2 - 200 mg/m².

[0035] The plate for lithography is producible using the positive type photosensitivity constituent of this invention. Image exposure of this plate is carried out by the semiconductor laser which emits a near infrared ray with a wavelength of 700-900nm. It is desirable to record in laser heat mode using the semiconductor laser of high power with an output of 50mW or more also especially in it. In this invention, a development can be promptly performed after laser exposure and development head end processes, such as heating down stream processing between laser exposure and a development, do not have the need in any way.

[0036] The development of the plate is carried out with an alkaline developer after laser exposure. The alkali water solution known conventionally can be used as a developer. For example, inorganic alkali salt, such as a sodium silicate, a potassium silicate, sodium phosphate, potassium phosphate, ammonium phosphate, phosphoric-acid 1 hydrogen sodium, dibasic potassium phosphate, phosphoric-acid 1 hydrogen ammonium, a sodium carbonate, potassium carbonate, an ammonium carbonate, a sodium hydrogencarbonate, a potassium hydrogencarbonate, an ammonium hydrogencarbonate, the sodium borate, a boric-acid potassium, ammonium pentaborate, a sodium hydroxide, a potassium hydroxide, ammonia, and a lithium hydroxide, is mentioned. Moreover, organic alkali chemicals, such as monomethylamine, dimethylamine, a trimethylamine, ethylamine, diethylamine, triethylamine, n butylamine, monoethanolamine, diethanolamine, triethanolamine, and ethylenediamine, can also be used. These alkali chemicals can be used combining independent or two sorts or more. Especially a desirable thing is the water solution of the silicate of alkali metal, such as a sodium silicate and a potassium silicate, in these alkali chemicals.

[0037] Moreover, various surfactants and organic solvents can be added if needed in order to raise the ink compatibility of control of a development rate, distribution of development dregs, or the printing version image section to a developer. Moreover, inorganic reducing agents, such as organic reducing agents, such as hydroquinone, resorcinol, and a catechol, a sodium sulfite, and a sodium hydrogensulfite, a defoaming agent, the chelating agent for water softening, etc. can be added if needed to a developer.

[0038] After treatment of the printing version processed with the developer is carried out with the rinse containing rinsing water and a surface active agent, and the desensitization liquid containing gum arabic or the derivative of starch. when using the positive type photosensitivity constituent of this invention as a printing version, after processing combining various these processings, it applies to the offset press etc. -- having -- many -- it is used for printing of several sheets.

[0039]

[Example] Although an example explains the effectiveness of this invention to a detail further below, thereby, this invention is not limited. In addition, the "weight section" and "% of the weight" are shown the "section" in an example, and "%", respectively.

[0040] (Production of an aluminum plate) The aluminum version (construction material 1050) with a thickness of 0.30mm Cleaning processing in 5% of sodium-hydroxide water solution (40 degrees C for 10 seconds), Electrolytic etching in the inside of a hydrochloric-acid water solution with a concentration of 0.5 mols [l.] (25 degrees C) current density 40 A/dm² -- the desmut treatment (30 degrees C for 10 seconds) for 30 seconds and in the inside of 5% sodium-hydroxide water solution -- subsequently anodizing (20 degrees C and current density 5 A/dm² for 1 minute) in the inside of 20% sulfuric-acid water solution was performed, and the aluminum plate of the base material for the lithography versions was produced.

[0041] Applied the sensitization liquid based on the formula 1 of the example 1 following with the wire bar on the aluminum plate, it was made to dry for 20 minutes at 90 degrees C, and the near infrared ray photosensitivity constituent of desiccation coverage 1.3 g/m² was obtained. Installation and 830nm

semiconductor laser (output of 500mW) were extracted for this to the beam diameter of 20 micrometers with the lens at the rotating drum, and scan exposure was performed. The development of the 25 degrees C of the exposed photosensitivity constituents was carried out for 30 seconds using the meta-sodium-silicate water solution or 12.5% sodium-silicate [meta-] water solution 10%. Consequently, the image clear also about which meta-sodium-silicate water solution was obtained.

[0042]

[A table 1]

処方 1

m-クレゾールノボラック樹脂

(BRM 565 ; Mw=2500~3500、昭和高分子製)

	20%メタノール溶液	50部
例示化合物 A-4	5%メタノール固体分散液	40部
エチルトリフェニルホスホニウムブロミド		
	2.5%メタノール溶液	10部

[0043] Thus, when the offset press (3200MCD by Ryobi, Ltd.) was equipped with two kinds of lithography versions processed with the developer with which concentration differs and having been printed to 150,000 sheets, the print which was excellent in printing image quality without non-image section dirt also about which printing version was obtained.

[0044] According to the formula 1 of two to example 6 example 1, various instantiation compounds and thoria reel phosphonium salt compounds were changed, and the near infrared ray photosensitivity constituent was produced. And scan exposure by semiconductor laser was performed like the example 1. When the exposed photosensitivity constituent was processed with two kinds of developers like the example 1, the image clear also about which developer was able to be obtained. Thus, when it printed and the offset press (3200MCD by Ryobi, Ltd.) compared two kinds of obtained lithography versions to 150,000 sheets, the print excellent in the printing image quality which does not have non-image section dirt about which printing version, either was obtained.

[0045]

[A table 2]

	化合物 [I]	トリアリールホスホニウム塩化合物 [II]
実施例 2	A-1	n-ヘキシルトリフェニルホスホニウムブロミド
実施例 3	A-4	アリルトリフェニルホスホニウムクロリド
実施例 4	A-4	テトラフェニルホスホニウムブロミド
実施例 5	A-8	ベンジルトリフェニルホスホニウムクロリド
実施例 6	A-9	n-ブチルトリフェニルホスホニウムブロミド

[0046] The undercoat liquid shown in the aluminum plate for the example 7 printing versions by the following formula 2 was applied using the wire bar, and it dried for 30 seconds at 80 degrees C. Coverage was 10 mg/m². Next, applied the sensitization liquid shown by the following formula 3 with the wire bar, it was made to dry for 20 minutes at 90 degrees C, and the near infrared ray photosensitivity constituent of desiccation coverage 1.7 g/m² was obtained. Scan exposure according this to semiconductor laser was performed like the example 1. When the exposed photosensitivity constituent was processed with two kinds of developers like the example 1, the image clear also about which developer was able to be obtained. Thus, when it printed and the offset press (3200MCD by Ryobi, Ltd.) compared two kinds of obtained lithography versions to 150,000 sheets, the print excellent in the printing image quality which does not have non-image section dirt about which printing version,

either was obtained.

[0047]

[A table 3]

処方 2

β-アラニン	0. 1 部
フェニルホスホン酸	0. 0 5 部
メタノール	4 0 部
水	6 0 部

[0048]

[A table 4]

処方 3

m-クレゾールノボラック樹脂			
(PR 5 1 7 6 7 ; Mw=4 8 0 0、住友ベークライト製)			
	2 0 %メタノール溶液		5 0 部
例示化合物 A-1 3	5 %メタノール固体分散液		2 0 部
ベンジルトリフェニルホスホニウムプロミド			
	5 %メタノール溶液		5 部

[0049] Applied the sensitization liquid shown in the aluminum plate for the example of comparison 1 printing versions by the following formula 4 with the wire bar, it was made to dry for 20 minutes at 90 degrees C, and the near infrared ray photosensitivity constituent of desiccation coverage 1.3 g/m² was obtained. Scan exposure according this to semiconductor laser was performed like the example 1. 25 degrees C of exposed photosensitivity constituents were processed for 30 seconds with two kinds of developers like the example 1. Consequently, the exposure section and a non-exposed area were eluted and what was processed in the meta-sodium-silicate water solution 12.5% was not able to obtain the version which functions as a printing version. Moreover, about what was processed in the meta-sodium-silicate water solution 10%, somehow, although the printing version was obtained, image concentration was not able to say it as the thin good printing version.

[0050]

[A table 5]

処方 4

m-クレゾールノボラック樹脂			
(BRM 5 6 5 ; Mw=2 5 0 0~3 5 0 0、昭和高分子製)			
	2 0 %メタノール溶液		5 0 部
例示化合物 A-4	5 %メタノール固体分散液		4 0 部

[0051] Applied the sensitization liquid shown in the aluminum plate for the example of comparison 2 printing versions by the following formula 4 with the wire bar, it was made to dry for 20 minutes at 90 degrees C, and the near infrared ray photosensitivity constituent of desiccation coverage 1.3 g/m² was obtained. Scan exposure according this to semiconductor laser was performed like the example 1. 25 degrees C of exposed photosensitivity constituents were processed for 30 seconds with two kinds of developers like the example 1. Consequently, although the printing version good about what was processed in the meta-sodium-silicate water solution 10% was obtained, the exposure section and a non-exposed area were eluted and what was processed in the meta-sodium-silicate water solution 12.5% was not able to obtain the version which functions as a printing

version.

[0052]

[A table 6]

処方 5

m-クレゾールノボラック樹脂		
(BRM 565 ; Mw=2500~3500、昭和高分子製)		
	20%メタノール溶液	10部
クレゾール系レゾール樹脂		
(BSK 316 ; Mw=2400、昭和高分子製)		
	20% n-ブタノール溶液	40部
例示化合物 A-4	10%メタノール固体分散液	40部
トリフェニルスルホニウムテトラフルオロボレート		
	5%メタノール溶液	30部

[0053]

[Effect of the Invention] The plate of the positive type photosensitivity constituent which can obtain the printing version which was excellent in stability to the developer of larger pH field more possible [development] also for a developer high [pH] therefore at print durability can be offered by using a thoria reel phosphonium salt compound and the photosensitive constituent which has a recording layer containing the cyanine dye which is the polymer and near infrared ray absorption color of fusibility in an alkaline developer.

[Translation done.]